

Remarks

Claims 1, 2, and 4-14 are in the application. Claims 1, 10, 11, 13, and 14 are in independent form. Claim 3 is cancelled. Reconsideration is requested.

The drawings are objected to due to informalities. Applicants submit herewith corrected formal drawings. Applicants request that the objection to the drawings be withdrawn.

Claims 1-3, 5, 6, 8, 9, and 10 are rejected under 35 U.S.C. 102(b) for anticipation by U.S Patent No. 4,858,020 of Homma. The remaining claims stand rejected under 35 USC 103(a) in view of Homma in view of various other references. Applicants respond as follows.

Amended claim 1 recites a solid-state camera device with vertical and horizontal scanning circuits. The vertical scanning circuit includes a vertical group scanning circuit and a vertical selector circuit. The vertical group scanning circuit selects successive row groups that each includes a plurality of rows. The vertical selector circuit selects at least one desired row within each successive row group selected by the vertical group scanning circuit to provide a row pixel set. The successive row groups extend substantially completely across the pixel matrix.

In addition, the horizontal scanning circuit includes a horizontal group scanning circuit and a horizontal selector circuit. The horizontal group scanning circuit selects successive column groups that each includes a plurality of columns. The horizontal selector circuit selects at least one desired column within each successive column group selected by the horizontal group scanning circuit to provide a column pixel set. The successive column groups extend substantially completely across the pixel matrix.

Fig. 1 of the application shows the recited vertical and horizontal scanning circuits. The successive row and column groups extending substantially completely across are described in the application beginning at page 10, line 23, for example, and illustrated in Tables 1-3. As stated in the application at page 2, lines 23-25, this "provides a method to obtain the reduced pixel set having image

data that is proportionately comparable to the image data of the entire pixel matrix.”

Applicants submit that neither Homma, nor any of the other cited references, teaches or suggests a solid-state camera device with vertical and horizontal scanning circuits that provide scanning of row and column groups that extend substantially completely across a pixel matrix in respective vertical and horizontal directions. Homma describes a system that provides a digital equivalent to optical tele-conversion by reading sensed image information from only the middle part of a solid-state image sensor. (Homma, col. 1, lines 44-50 and Figs. 1, 2, and 5.) The system of Homma is directed to providing electronic zooming and panning of images (Homma col. 1, line 63 to col. 2, line 2 and col. 4, lines 9-12.)

Homma provides no teaching or suggestion of providing a substantially complete image with a reduced set of pixels that extends substantially completely across a pixel matrix, as provided by the scanning of row and column groups recited in claim 1. Instead, Homma is directed to displaying a segment that is smaller than the pixel matrix, and so would lead a person skilled in the art away from the subject matter of claim 1. None of the other cited references teaches or suggests the scanning of row and column groups recited in claim 1.

Applicants submit, therefore, that claim 1 and its dependent claims are patentably distinct from the cited references and request that the claims be allowed. Applicants submit that the dependent claims are further patentable for the following reasons.

Amended dependent claim 2 recites that the horizontal selector circuit and the vertical selector circuit include respective memories for storing respective column and row pixel sets. As set forth in claim 1, the column and row pixel sets correspond to column and row groups that extend substantially completely across the pixel matrix. Neither Homma nor any of the other cited references teaches or suggests a solid-state camera device that generates such data. As a result, neither Homma nor any of the other cited references can teach or suggest

memories that store such data. Applicants submit, therefore, that claim 2 is patentably distinct from the cited references.

Claim 4 recites that the photoelectric pixels are arranged in a first sequence of color, and that the vertical scanning circuit and horizontal scanning circuit read a reduced image set from the pixels in a sequence of color that is substantially identical to the first sequence of color. The Examiner states that claim 4 is obvious in view of Homma in combination with the color pixel arrangement of US Patent No. 4,858,020 (Bowalek). Applicants respond as follows.

Bowlek describes a magenta-white-yellow color system for a digital image sensor. The combination cited by the Examiner would select a contiguous central group of pixels (Homma) from a set of multi-color pixels (Bowalek). However, neither Bowlek nor Homma provides any teaching or suggestion of selecting from a sequence of color pixels column and row groups that extend substantially completely across the pixel matrix and form a reduced image set with substantially the same color sequence. Applicants submit that claim 4 is patentably distinct from the cited references and request that the rejection be withdrawn.

With regard to claim 5, the Examiner states that the recited cut-off switch is inherent in the design of Homma. Applicants note that for a feature to be inherent, the cited reference must "necessarily" disclose feature, even though it says nothing explicit concerning it. MPEP 2163.07(a). Applicants note that the recited cut-off switch is described in the application at page 8, lines 5-12, as reducing power used by non-selected pixels. There is no indication that cutting-off power to such pixels is necessary to not selecting them. Applicants submit, therefore, that the rejection of claim 5 is improperly based upon a feature that is not necessarily or inherently included in the cited reference. Applicants request, therefore, that the rejection of claim 5 be withdrawn.

With regard to claim 6, the Examiner states that Homma discloses the recited shift registers. Amended claim 6 recites shift registers that can be preset

globally so as to select simultaneously a plurality of spaced-apart row groups or and a plurality of spaced-apart column groups, respectively. Applicants submit that Homma provides no teaching or suggestion of reading plural spaced-apart row and columns and, as a result, provides no teaching or suggestion of shift registers that select plural spaced-apart row groups and plural spaced-apart column groups. Applicants request, therefore, that the rejection of claim 6 be withdrawn.

Applicants submit that claims 7-9 are patentably distinct as dependents of claim 1.

Amended claim 10 recites a solid-state camera device with means for reading a reduced pixel set comprising plural spaced-apart horizontal rows of pixels and plural spaced-apart vertical columns of pixels. The horizontal rows are arranged substantially completely across a pixel matrix in a vertical direction and the vertical columns are arranged substantially completely across the matrix in a horizontal direction.

Homma describes a system in which a central, contiguous pixel set may be read from a pixel matrix. Homma does not teach or suggest reading spaced-apart rows or columns of pixels. In addition, Homma does not teach or suggest reading a reduced pixel set that extends substantially completely across the pixel matrix. Applicants submit, therefore that claim 10 is patentably distinct from the cited reference and request that the rejection be withdrawn.

Claim 11 recites a reading scanning circuit that reads pixels by selecting a reduced pixel set of the photoelectric pixels in a color pixel matrix. The reduced pixel set includes at least omitted rows of pixels or omitted columns of pixels and has a color sequence that is substantially similar to the first sequence of colors. Homma describes a system that reads only contiguous pixel sets, with no omitted pixels included in the set. Bawolek et al. describes a color pixel set, but neither reference teaches or suggests reading a reduced color pixel set with substantially the same color sequence as in the pixel matrix. Applicants submit,

therefore that claim 11 is patentably distinct from the cited reference and request that the rejection be withdrawn.

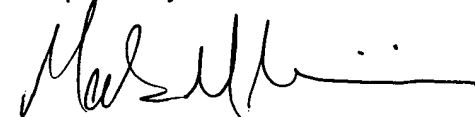
Applicants submit that claim 12 is allowable as depending from base claim 11. In addition, claim 12 recites that the reduced pixel set includes both omitted rows and column groups of pixels. Neither of the cited references teaches such a feature.

Claims 13 and 14 each recite a solid-state camera device that selects spaced-apart rows of the matrix with omitted rows between them and spaced-apart columns of the matrix with omitted columns between them. As indicated above, none of the cited references teaches or suggests such a selection of pixels to form a reduced pixels set. Applicants submit, therefore, that claims 13 and 14 are patentably distinct from the cited references and request that the rejection be withdrawn.

Applicants believe the application is in condition for allowance and respectfully request the same.

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Respectfully Submitted,



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